# Red Hat User Group

June 2014

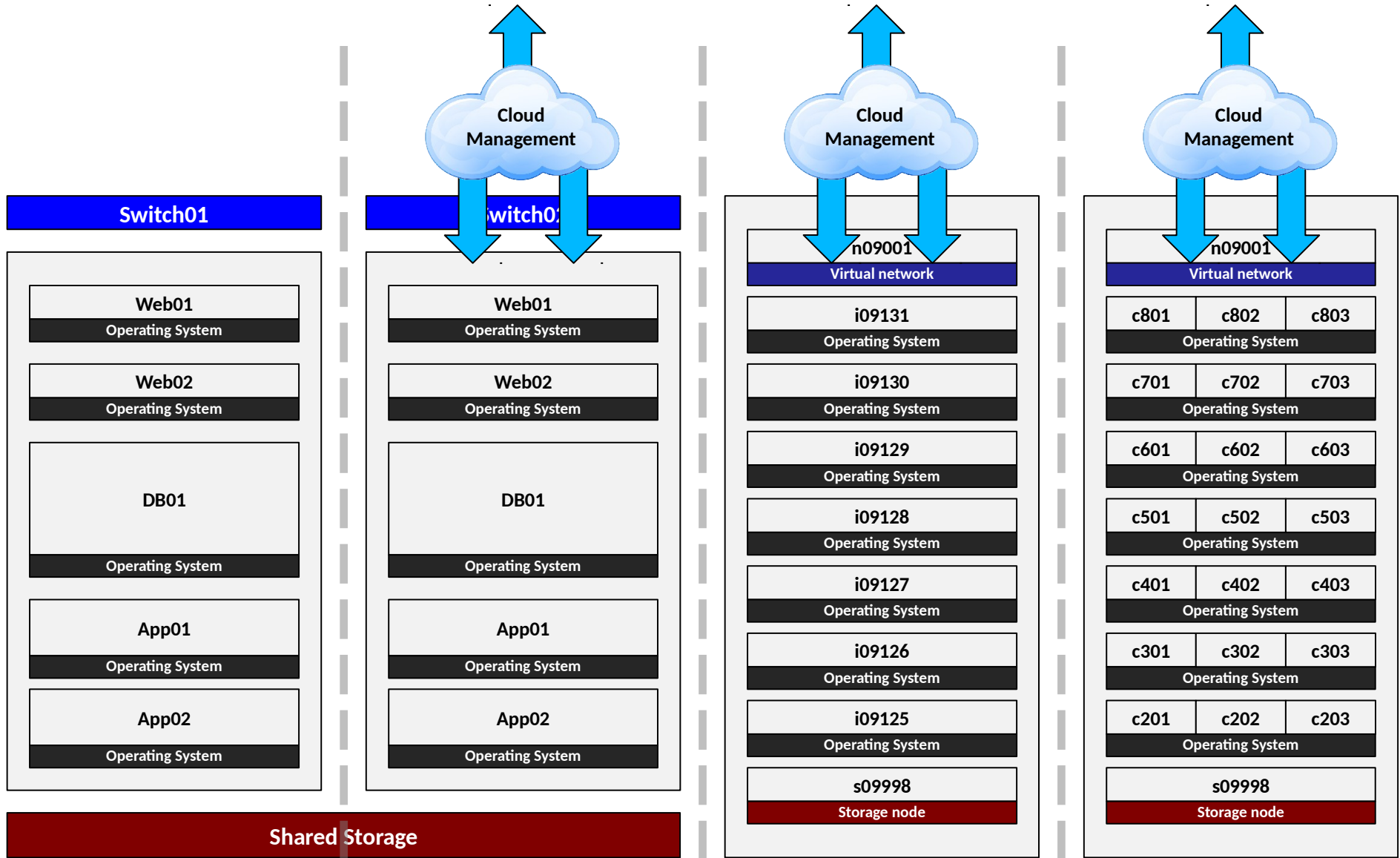Marco Berube, *Cloud Solutions Architect*

mberube@redhat.com

# OPENSTACK & CLOUDFORMS

# What is cloud computing?

# Iterations of Cloud Computing



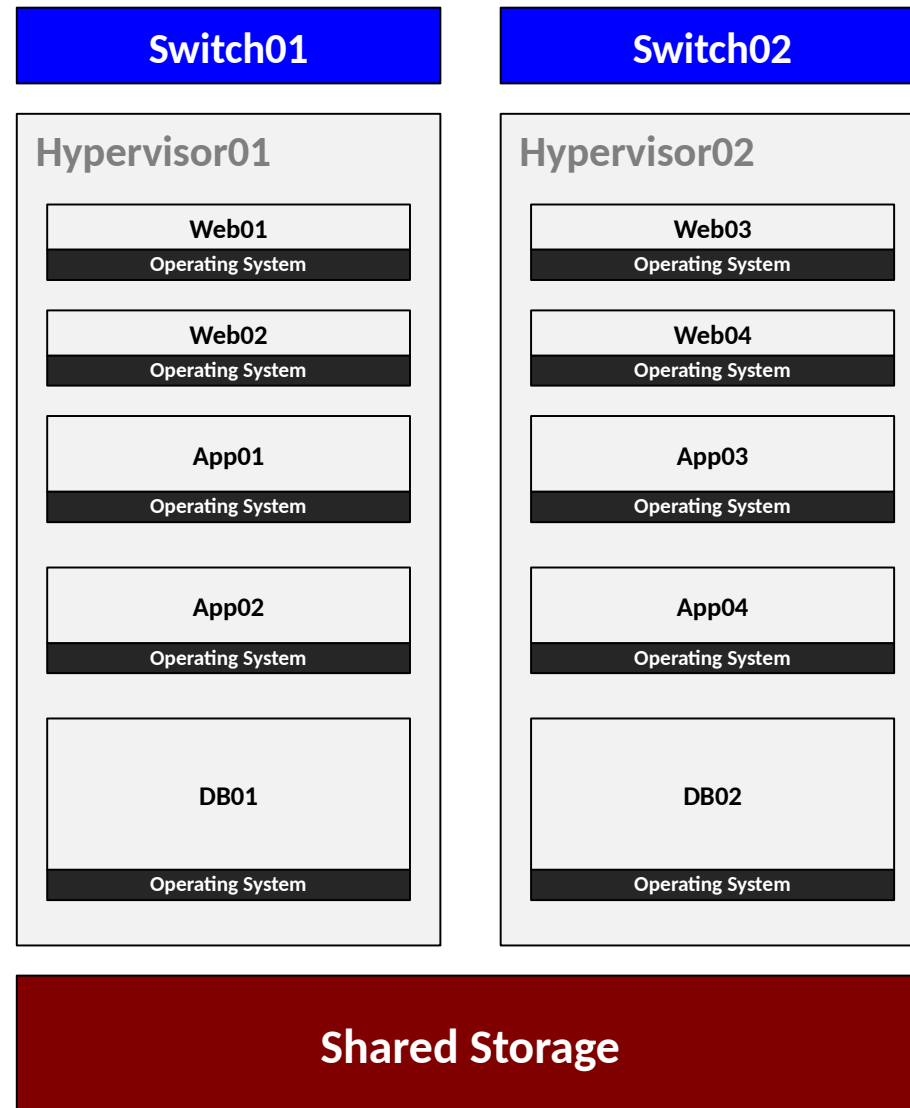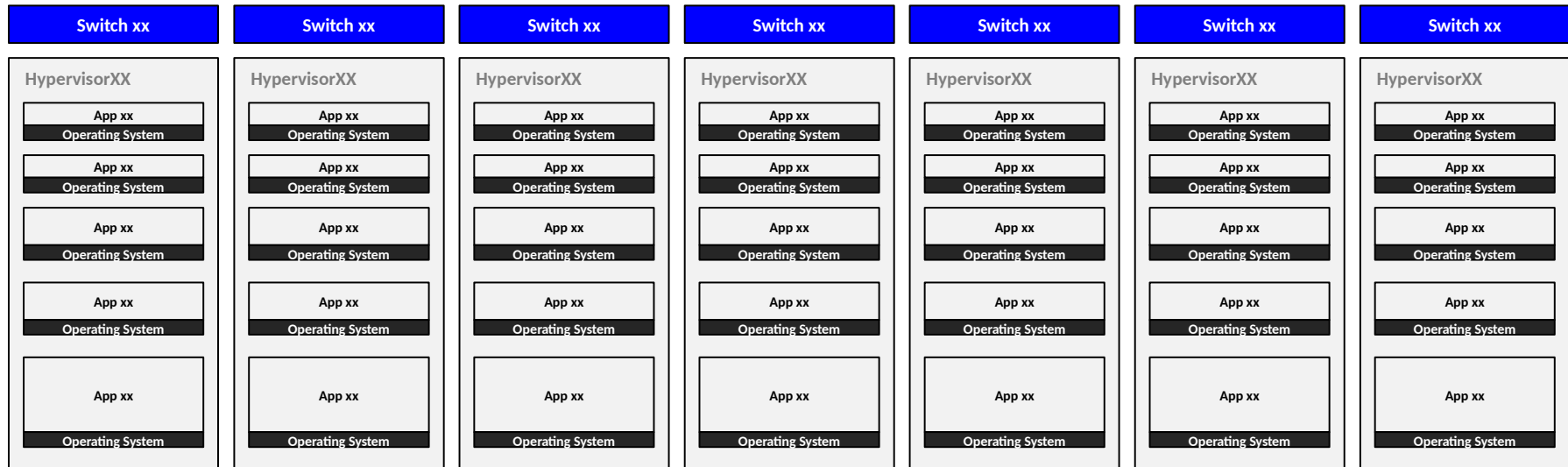**PHASE #1**  **PHASE #2**  **PHASE #3**  **PHASE #4**

# Phase 1: Compute virtualization

| Switch01 | Switch02 |
|---|---|

**Hypervisor01**

| Web01 |
|---|
| Operating System |

| Web02 |
|---|
| Operating System |

| App01 |
|---|
| Operating System |

| App02 |
|---|
| Operating System |

| DB01 |
|---|
| Operating System |

**Hypervisor02**

| Web03 |
|---|
| Operating System |

| Web04 |
|---|
| Operating System |

| App03 |
|---|
| Operating System |

| App04 |
|---|
| Operating System |

| DB02 |
|---|
| Operating System |

**Shared Storage**

# Success of server virtualization
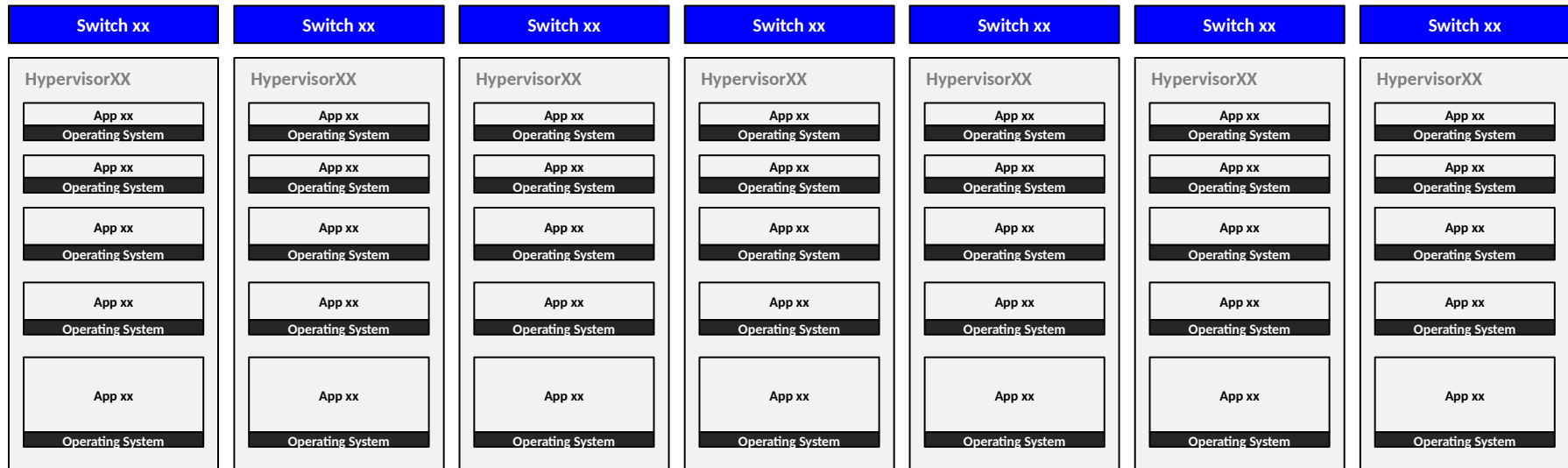
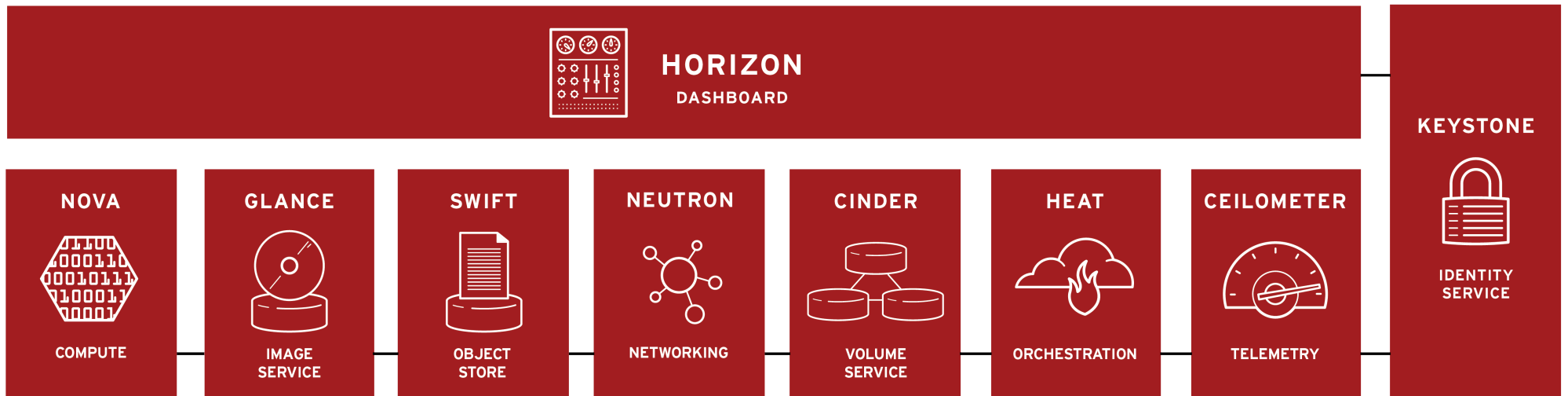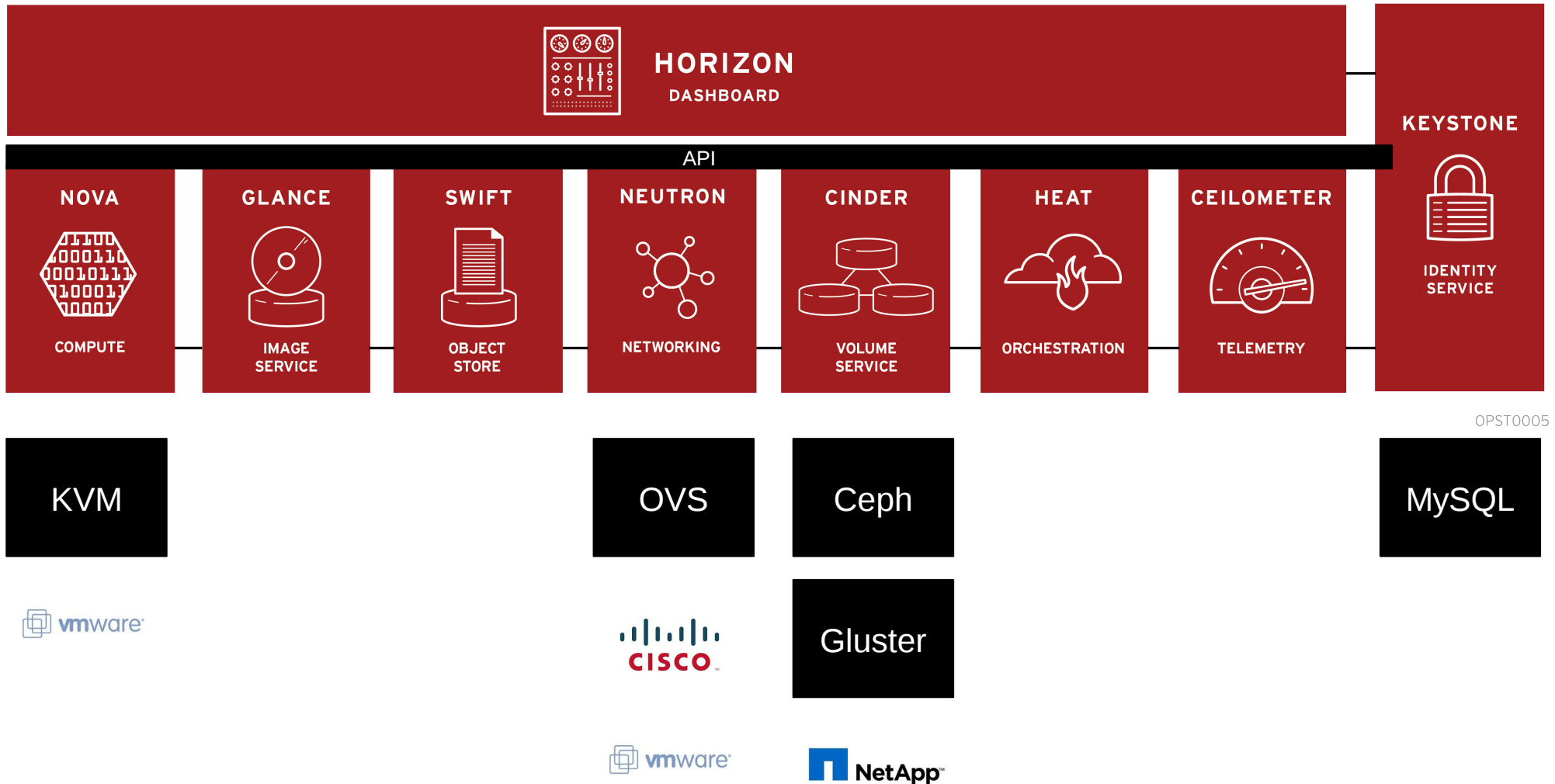# Cloud-in-a-box?

# or Cloud Computing?

# OPENSTACK
## CLOUD INFRASTRUCTURE FOR CLOUD WORKLOADS

- Modular architecture, designed to easily scale out
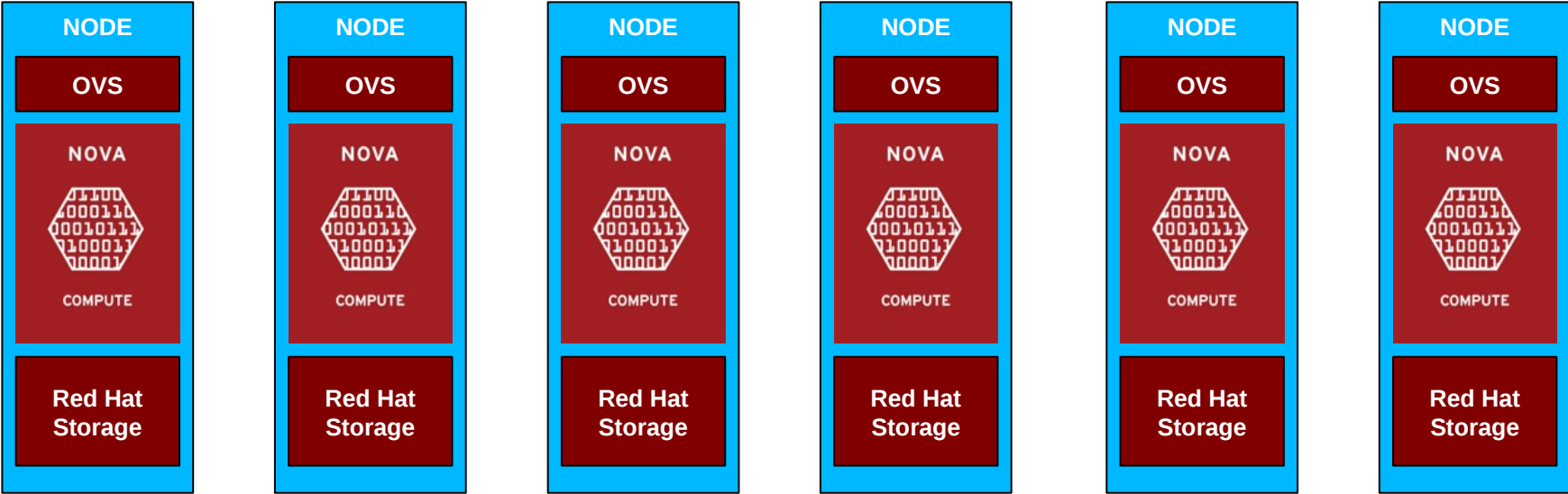- Based on (growing) set of core services



OPST0005

# Brokers
## Most modules are brokers



**HORIZON**
DASHBOARD

**KEYSTONE**

API

| NOVA | GLANCE | SWIFT | NEUTRON | CINDER | HEAT | CEILOMETER |
|------|--------|-------|---------|--------|------|------------|
| COMPUTE | IMAGE SERVICE | OBJECT STORE | NETWORKING | VOLUME SERVICE | ORCHESTRATION | TELEMETRY |

IDENTITY SERVICE

OPST0005

KVM

OVS

Ceph

MySQL

vmware®

CISCO

Gluster

vmware®

NetApp™

# Openstack architecture
## Hybrid compute and storage nodes

**RED HAT OPENSTACK TECHNOLOGY (TECHNICAL PRESO) | 2013**
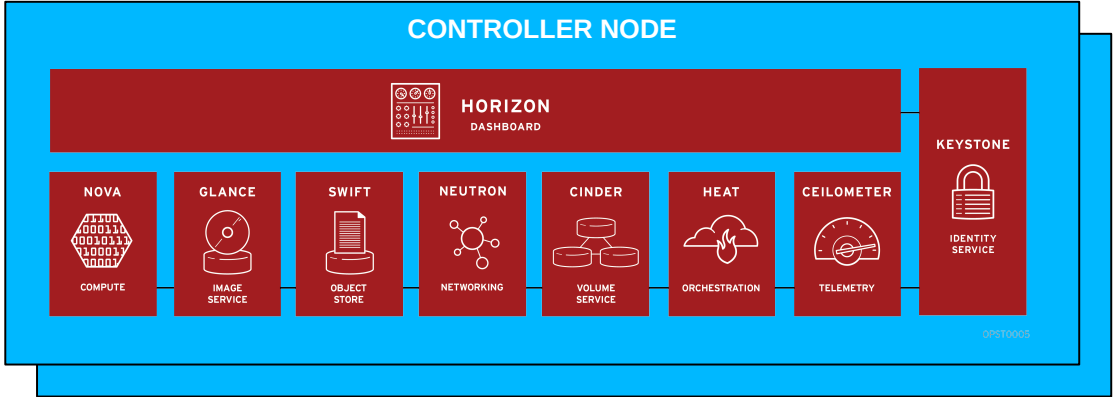
redhat.

# Openstack
# demo

# Red Hat Cloudforms

# Iterations of Cloud Computing

| Switch01 | Switch02 | Cloudforms | Cloudforms |
|---|---|---|---|
| | | Cloudforms | |

**PHASE #1**

- Web01 — Operating System
- Web02 — Operating System
- DB01 — Operating System
- App01 — Operating System
- App02 — Operating System
- Shared Storage

**PHASE #2**

- Web01 — Operating System
- Web02 — Operating System
- DB01 — Operating System
- App01 — Operating System
- App02 — Operating System

**PHASE #3**

- n09001 — Virtual network
- i09131 — Operating System
- i09130 — Operating System
- i09129 — Operating System
- i09128 — Operating System
- i09127 — Operating System
- i09126 — Operating System
- i09125 — Operating System
- s09998 — Storage node

**PHASE #4**

- n09001 — Virtual network
- c801 | c802 | c803 — Operating System
- c701 | c702 | c703 — Operating System
- c601 | c602 | c603 — Operating System
- c501 | c502 | c503 — Operating System
- c401 | c402 | c403 — Operating System
- c301 | c302 | c303 — Operating System
- c201 | c202 | c203 — Operating System
- s09998 — Storage node
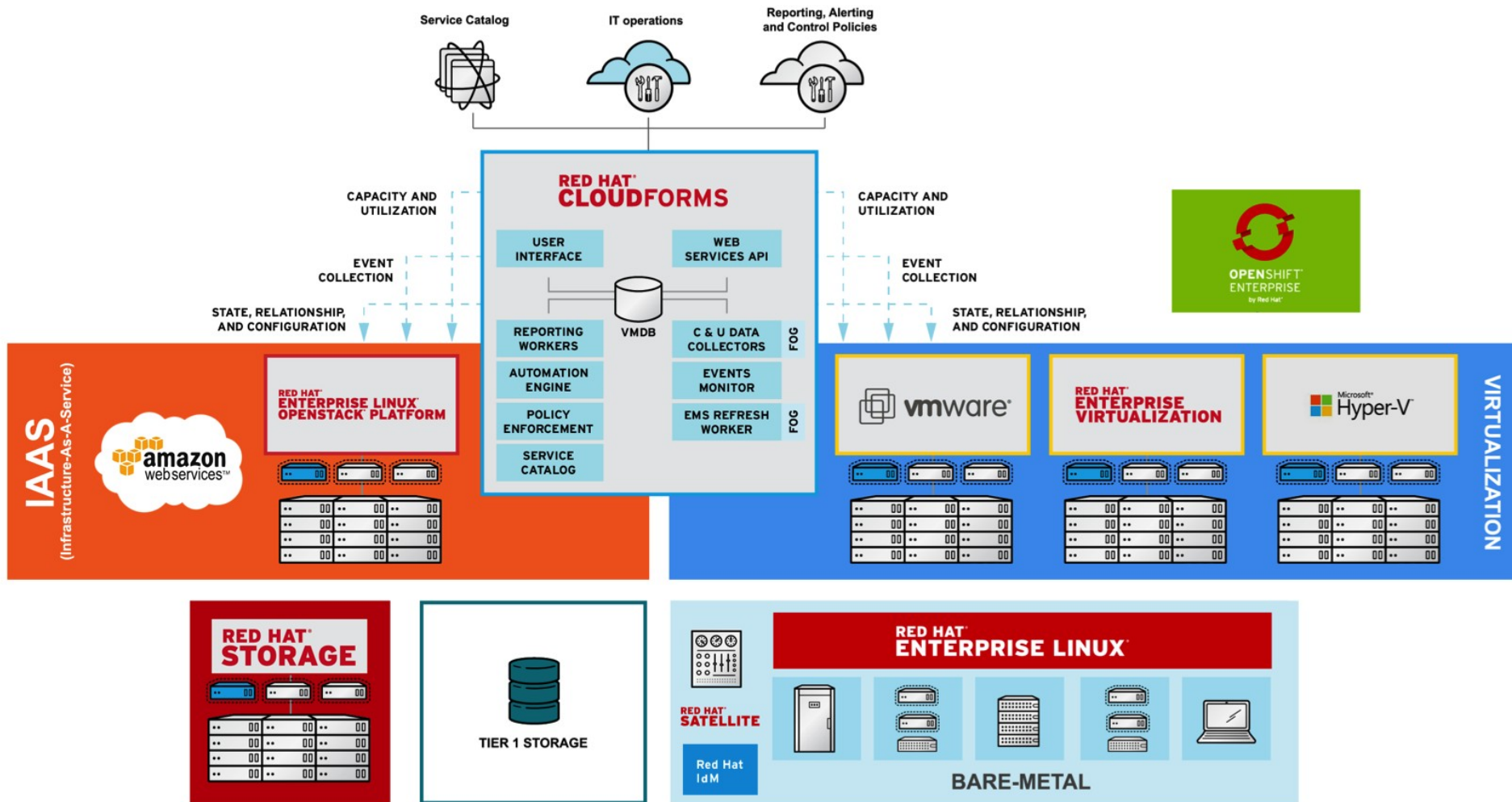
# Open Architecture
## Based on Open Source software

# What we hear from our customers…

**RAPID PROVISIONING**

Accelerates time to value

**USAGE BASED METERING**

Provides financial insight and optimizes resource utilization to help reduce cost

**LIFE CYCLE MANAGEMENT**

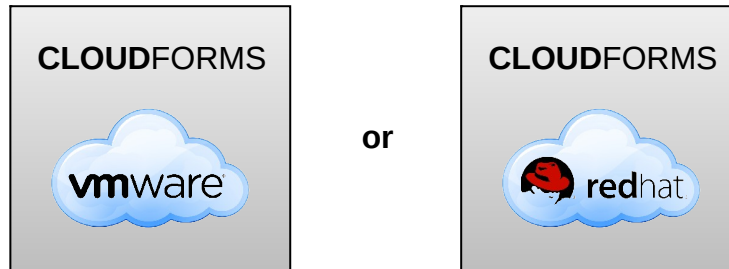Keep your environment clean, secure and compliant

**SCALABILITY**

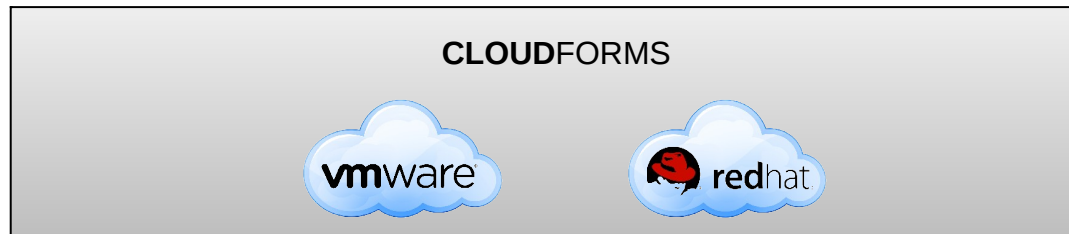Supports the ability to scale up and down based on my application load

# Cloud Operations Management
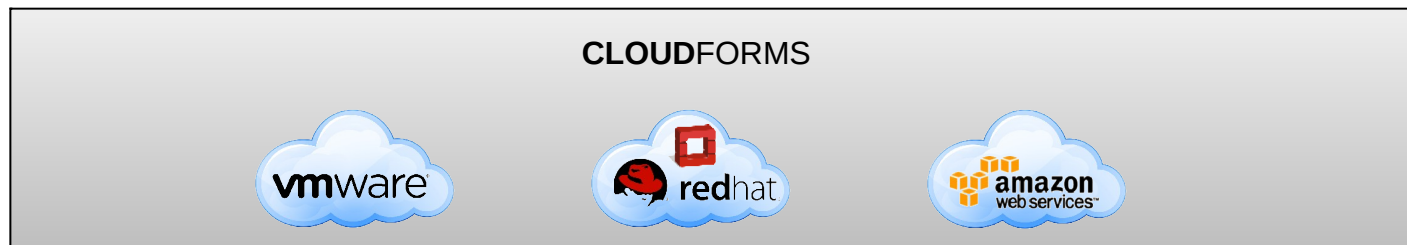## Usage Scenarios

### 1. Transform Existing Virtual Platforms into Clouds

**CLOUD**FORMS

**vm**ware

or

**CLOUD**FORMS

redhat

### 2. Migrate to Lower Cost Virtual Platform

**CLOUD**FORMS

**vm**ware    redhat

### 3. Build Open Hybrid Cloud

**CLOUD**FORMS

**vm**ware    redhat    amazon web services

# RED HAT CLOUDFORMS
# Capabilities

**INSIGHT**
Discovery, Monitoring, Utilization, Performance, Reporting, Analytics, Chargeback, Trending

**CONTROL**
Security, Compliance, Alerting, Policy-Based Resource and Configuration Enforcement

**AUTOMATION**
IT Process, Task and Event, Provisioning, Workload Management and Orchestration

**INTEGRATION**
Systems Management, Tools and Processes, Event Consoles, CMDB, RBA, Web Services

redhat.

# RED HAT CLOUDFORMS

## Built for enterprise scale cloud operations management

| | | | |
|---|---|---|---|
| **AGENT-FREE, VIRTUAL APPLIANCE ARCHITECTURE** | **WEB-BASED OPERATIONS, ADMIN AND SELF-SERVICE** | **ENTERPRISE DIRECTORY SUPPORT** | **SUPPORTS MULTI-TENANCY** |
| Rapid deployment, non-invasive (Industry Standard OVF) | Access anywhere from any browser | Leverage directory for authentication and role | Securely share infrastructure |
| **HORIZONTALLY SCALABLE** | **LOAD BALANCING, FAILOVER/BACK** | **MANAGEMENT ACROSS MULTIPLE LOCATIONS** | **MANAGEMENT ACROSS VIRTUAL PLATFORMS & PUBLIC CLOUDS** |
| Highly scalable, load balancing | Provides reliability, high availability | Single pane of glass, unified management | Single pane of glass, unified management |
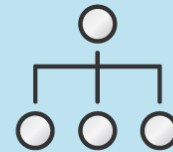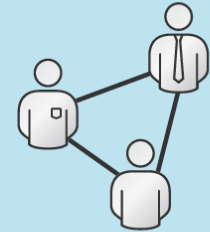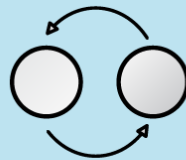
redhat.